Case Study

1. Draw Context Diagram and Diagram-0 for following cases.
    a. **Customer Order Management System:** Customer will place the order. The order placed by customer will be validated by order manager. Once the order is confirmed, the customer makes payment as respective of the order. Things to consider as external entity will be **Customer, Order Manager.**
    b. **Medical Shop Management System:** Patient will come with the prescription. The shop will deliver the medicine to the patient according to the prescription. Once the medicine is delivered, patient makes payment for the medicine. Shop will also manage the stock inventory as well.
    c. **Library Management System:** Student/Teacher will issue books or any other materials from library. The validity date of the issue need to be considered. On late return of the materials late fine will be punished to the issuer. Library will also manage the stock inventory of the books or any other materials.
    d. **Student Enrollment System:** Student will enroll to the college providing basic details. The subject and course he/she wish to take will be assigned to the student. On increment of their level, the education details of student will be updated to their profile. Enrollment process will be managed by **Receptionist** of the college.

2. **Draw Context Diagram and Diagram-0 for following system:**
   A college offers correspondence courses to students. Each course lasts 20 weeks and is based on a weekly study module and progress test. At the end of the course students sit an invigilated examination. The college Registrar deals with enquiries and applications, and students applying who have sufficient qualifications are asked to register by completing and submitting an application form. After approval by the Academic Director, the application form is returned to the Registrar who creates a student file. The Accounts department receive the application form and using information from the student file creates an invoice

that is sent to the student. Payments made are registered on the invoice file. The first batch of student material and tests is issued from the library only to students who have paid fees (this information is taken from the invoice file). Progress tests are marked by academic staff and the results, together with comments, are sent out with next week's study block. The library will only issue study material/progress tests when a student has returned test answers from the previous week.

3. **Draw Context Diagram and Diagram-0 for following system:**
   The keepers in an animal park look after the feeding of the animals. Each animal is located in a different area of the park. Each area has its own keeper who reports to the head keeper. The head-keeper maintains a record of the sorts of food that each animal species or type in the park should be fed, and in what quantities. There is no distinction made between different animals of the same species. The keepers access the information so they know what to feed each animal type. Each animal type may be given more than one type of food, and each type of food may be fed to a number of animal types. Each day the keepers will take out the food needed for the animals in their care and record this on the information system. These food types can be perishable or non-perishable according to their shelf life. For example, fresh fruit and vegetables would be perishable where tinned produce or cereals would be considered to be non-perishable. The office staffs keep a track of the food supplies. They monitor which foods are running low every two or three days and draw up a list of that which needs to be ordered. In order to help them, the information system contains details about re-order quantities and re-orders levels. Sometimes they may need to readjust their re-order levels. A number of suppliers are used, and their names, addresses and telephone numbers are kept in the system. Because of the large quantities required and the difficulty of obtaining some foods at certain times of the year, there is more than one possible supplier for each type of food. Most of the ordering is done via the telephone. A standard order form is then created. The order form usually contains details of more than one food type to be ordered from a particular supplier. The order also contains details of the date of the order and what quantities are required for each food type.When deliveries are received, the keepers check the delivery note against the goods received, amend it if necessary and pass it on to the office. Here it is checked against the orders placed. It they agree, this is recorded in the system. The office staffs checks the received orders against an invoice sent by the supplier. If they agree, payment is be made. Any discrepancies are taken up with the supplier, and the supplier's response is noted in the system. Most suppliers send an invoice each month.

4. **Draw Context Diagram and Diagram-0 for following system:**
   A doctors' surgery consists of five doctors a receptionist and a manager. They need an information system to help them to run the facility. A patient may ring the surgery to make an appointment with a doctor. Each patient nominally has a doctor associated with him or her but they may often opt to see any doctor in the surgery that is available. The receptionist sees which doctors are on duty on which days and offers appointment alternatives from which the patient may choose. If an appointment is not available within a short time and the patient must be seen quickly they are asked to attend an emergency surgery that takes place every evening between 5 and 6 p.m. The appointment can be 5, 10 or 20 minutes long, dependent on the reported reason for seeing the doctor. This reason is recorded on the system. Sometimes patients ring to cancel appointments. Appointments may be made for up to six weeks in advance. Appointments that are more than 3 weeks old are automatically deleted from the system. Some appointments are for a doctor to go and visit a patient at home when the patient cannot come to the surgery. Every day one of the doctors is available for home visits in the afternoon. A record is kept of each patient and the treatments they have received for any ailments they may have had. Here are recorded many details such as allergies, details of which drugs patients have been administered in which quantities and when. Also relevant personal details of each patient are recorded. Typically the doctor who sees a patient will want access to this information before deciding on the relevant treatment to give. When the doctor prescribes treatment, details will be recorded in the patient's record. Repeat prescriptions are automatically produced by the system and are available for collection at the surgery by the patient. At any time a doctor may suspend or cancel the prescriptions. Patients may register with the surgery providing the number registered to each doctor is not above a certain maximum. Sometimes patients die or leave the area. In this case the patient is removed from the system and their details are archived. The manager is responsible for dealing with this aspect.

5. **Draw Context Diagram and Diagram-0 for following system:**
   A large pizza business makes pizzas and sells them. The pizzas are manufactured and kept in cold storage for not more than two weeks. The business is split into a number of functional units. There is Production Control, Manufacturing, Stores, Accounts, Sales, Shipping and Purchasing. Production Control are responsible for organising which pizzas to produce in what order and in what quantity. They need to schedule the production of the pizzas

according to the current and expected sales orders together with the number of pizzas already in Stores. Manufacturing take the raw materials from the Stores and manufacture pizzas returning the completed goods to the Stores. Accounts deal with the payments for the pizzas when delivered to the customer and the payment to the suppliers of the raw materials. Sales deal with customer orders whilst Purchasing organise the buying of raw material from suppliers. Shipping manages the packing and delivery of the goods to the customer with a delivery note. When a sales order is received by sales they record what is being ordered and by whom. They also record the details of the expected date of delivery. Production Control access this information and make sure that, if required, pizzas are produced by Manufacturing and are ready in Stores for when the delivery needs to be made. After the delivery is made Accounts make sure that the customer receives an invoice and that payment for the invoice is received at which time a receipt is issued. Purchasing look at the current stock of raw materials and by using current stock levels, supplier turnaround times and quantity to be ordered decide what needs to be ordered on a daily basis. Their aim is never to run out of an ingredient but to minimise the amount of raw material kept in stock.